

**Notice of Allowability**

Application No.

09/579,949

Examiner

Jan M. Ludlow

Applicant(s)

WINKLER ET AL.

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amdt and seq listing, filed 4/22 and 4/30/2004.
2. ☒ The allowed claim(s) is/are 48-98 and 100-123.
3. ☒ The drawings filed on 26 May 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 5/28/2004.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Jan M. Ludlow  
Primary Examiner  
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1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Iwanicki on May 28, 2004.

The application has been amended as follows:

In claim 48, after line 2, insert:

--(a) locating a dispenser to dispense a solution a distance away from a surface of the support; --

In claim 48, line 3, change "(a)" to --(b)--.

In claim 48, line 6, change "(b)" to --(c)--.

In claim 48, line 8, change "(c)" to --(d)--.

Cancel claims 124-178.

Replace the Abstract with the Abstract found below on a separate page.

2. The following is an examiner's statement of reasons for allowance: The amendment serves to make the claims commensurate in scope with applicant's arguments. The examiner adds the following:

3. Deeg ('638) teaches deposition of droplets onto a substrate in compartments.

The compartments can be individual dots (col. 3, line 4). The dots can be produced by a quantum of liquid ejected from a printer to cover an area as small as 500 square micrometers (col. 3, lines 27-37). Center to center spacing of dots from one

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compartment to the next may be as small as .26mm (col. 9, line 3) in an embodiment in which overlapping dots are used in each compartment. None of the examples teaches an embodiment with separate dots, and it is therefore unclear whether or not one of ordinary skill would have used a) individual drops ejected from the printer to form individual dots (instant single step) or the same spacing between individual dots in all directions as between the lines (compartments) in the multi-dot compartments shown (resulting in the instant density). Deeg teaches ligands (antibodies), and further teaches that other specific bioreactive interactions may be used (col. 1, line 36). Deeg teaches that compartments should be close together, but spatially separated (col. 2, lines 64-65). The compartments contain different reagents (col. 3, lines 11-12). With or without Prats, an inkjet printer head is spaced from the substrate. However, Deeg '638 teaches a test strip with repeating patterns of three reagents, and the instant claims define over Deeg by at least the limitation to 100-1000 different ligands, which Deeg does not seem to contemplate at all.

4. Deeg ('688) has a similar disclosure as Deeg ('638) with respect to individual dots and overlap (col. 6, lines 22-32), but only discusses "several" reagents (col. 5, line 12), and a 12 jet printhead (col. 6, line 62), neither of which suggest the 100-1000 different ligands presently claimed.

5. Brennan ('796) teaches depositing plural droplets per region (col. 7, lines 63-64), and therefore does not teach or suggest "a single coupling step" as claimed.

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6. Gordon also fails to teach or suggest "a single coupling step" as claimed for the volume claimed at the density claimed. The rejections over Pirrung and Southern are similarly overcome.

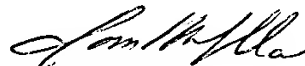
7. The examiner agrees with applicant that the disclosure of Khrapko is not sufficiently detailed to support a rejection. The examiner further notes that, e.g., on page 4 of the Facts and Arguments in Support of Opposition by A. G. Sheard, the method of Khrapko is interpreted as a capillary (contact) method.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow  
Primary Examiner  
Art Unit 1743

Jml  
May 30, 2004

#### Abstract of the Disclosure

A method for producing polymer arrays by spacing a dispenser a distance from a surface of a support, dispensing a volume containing a monomer in a single coupling step of less than 5 nl to occupy a localized area of less than 1 cm<sup>2</sup> of the surface of the support, allowing the monomer to bind directly or indirectly to the support and repeating the steps to produce an array of at least 100 polymer ligands at a density of 1000 per cm<sup>2</sup> or greater.